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5. *MELIOLA FURCATA*, Lev. Ravenel, F. A., No. 330. Ellis, N. A. F., No. 1297.

Spots orbicular, mostly epiphyllous, often confluent and covering nearly the entire surface; mycelium brown, creeping, remotely septate, branching, intricate also with short, obovate, 1-septate, alternate branches; perithecia black, globose, often thickly clustered, at length collapsing, appendaged, 150 μ in diameter; appendages black, erect, rigid, apices twice dichotomous, 200 x 6 μ ; asci ovate, rostrate, 4-spored, evanescent; sporidia brown, oblong, 4-septate, constricted at the septa, 40—60 x 15—20 μ .

On leaves of *Bignonia capreolata* and *Sabal serrulata*, Florida.

6. *MELIOLA MANCA*, E. & M. Am. Nat. 17, p. 1284. Ellis, N. A. F., No. 1292.

Spots orbicular, 1—2 mm. in diameter, mostly epiphyllous, thickly scattered and often confluent; mycelium black, creeping, branches opposite, also short-obovate, alternate branches (haustoria); perithecia black, subglobose, papillose, collapsing, appendages and erect hyphæ none; asci ovate-oblong, mostly 2-spored; sporidia oblong-cylindrical, brown, 3-septate, constricted at the septa, slightly curved and a little flattened, 35—45 x 12—15 μ .

On living leaves of *Myrica cerifera*, Florida.

7. *MELIOLA MITCHELLÆ*, Cke. Ravenel, F. A., No. 88. Ellis, N. A. F., No. 1294.

Spots black, thin, mostly epiphyllous, often covering the entire surface, mycelium dark brown, branching, intricate, also with short, ovate, alternate, 1-septate branches; erect hyphæ, simple, dark brown, setaceous, apices entire, 250 x 6 μ ; conidia light brown, obovate or clavate, 3-septate, 27—30 x 4 μ , borne upon erect, light brown, subhyaline hyphæ; perithecia black, globose, smooth, 100—125 μ in diameter; asci-cylindric-clavate, 39 x 9 μ ; sporidia oblong-elliptic, brown, 4-septate, 35 x 15 μ .

On leaves of *Mitchella repens*, Florida.

8. *MELIOLA TENUIS*, B. & C. Grev. 7, p. 49.

On *Arundinaria*. Ravenel, F. A., No. 330. Georgia.

This appears to be *Meliola amphitricha*, Fr.

NEW FUNGI.

BY J. B. ELLIS AND B. M. EVERHART.

[Continued from page 141.]

LOPHIOSTOMA ROSBOTINCTUM, E. & E.—On dead twigs and limbs of *Staphylea trifolia*. Perithecia gregarious, hemispheric or subglobose, subcarbonaceous, black and roughish, $\frac{1}{3}$ mm. diameter, with a slightly prominent, compressed ostium, covered at first by the epidermis which assumes a dull rose colored tint over that part of the stems occupied by the fungus. Asci clavate-cylindrical, subsessile, 100—112 x 13—15 μ ;

paraphyses filiform. Sporidia cylindrical-fusiform, pale yellow, 2-seriate, constricted and 1-septate in the middle, each division with 4—5 large nuclei, and each tipped with a small, subglobose appendage. The perithecia are at length emergent or superficial when the epidermis disappears.

HYMENOCHÆTE FIMBRIATA, E. & E.—On dead *Pinus Murrayana*, Yellowstone Park, Montana, 1885. Collected by Frank Tweedy. Resupinate, suborbicular, 2—8 cm. diameter, margin umber brown, laciniately divided so as to be coarsely fimbriate; hymenium silver gray, the whole forming a thick, tough, membranaceous layer which is partially separate from the matrix. The hymenium is composed of a densely compacted layer of erect threads, with obtuse and slightly swollen tips, giving the surface a velvet-like texture. Part of these threads are hyaline and part umber or chestnut brown. The former are a little longer and thus give the peculiar gray tint to the hymenium which, when examined with a lens, or seen with the naked eye, has the appearance of being overrun with a white mould.

ZYGODESMUS INDIGOFERUS, E & E.—On very rotten wood, West Chester, Pa., Sept. 1885. Forming a thin, loose, submembranous stratum, indigo blue, becoming greenish yellow, margin byssoid. Flocci slender, branched, septate, mostly less than 3 μ in diameter. Spores globose, smooth on short basidia (8—10 x 3 μ .) Approaches *Thelephora*.

DACRYMYCES CORTICIOIDES, E. & E.—On rotten pine logs and limbs, Newfield, N. J., Oct., 1885. Suborbicular, 2—5 mm., convex-applanate, often subumbilicate-depressed in the center, pale, subvelutinous and with an even surface when young, becoming pale orange and when confluent, as it often is, more or less plicate, apparently from mutual pressure. Basidia cylindrical, more or less dichotomously branched, 100 μ long or more by about 4 μ thick. Spores oblong-elliptical with an oblique apiculus, becoming uniseptate, 12—17 x 4—5 μ . Looks much like overgrown specimens of *Helotium confluens*, Schw., or *H. citrinum*, Fr., when fresh, and in the dry state resembles a *Corticium* with a narrow, white, subbyssoid margin. The orange color deepens in drying.

LOPHIOSTOMA ROSECTINCTUM, E. & E.—On dead twigs and limbs of *Staphylea trifolia*. Perithecia gregarious, hemispheric or subglobose, subcarbonaceous, black and roughish, 1-3 mm. diameter, with a slightly prominent, compressed ostiolum, covered at first by the epidermis which assumes a dull, rose-colored tint, over that part of the stems occupied by the fungus. Asci clavate-cylindrical, subsessile, 100—112 x 13—15 μ ; paraphyses filiform. Sporidia cylindrical fusiform, pale yellow, 2-seriate, constricted and 1-septate in the middle, each division with 4—5 large nuclei, and each end tipped with a small, subglobose appendage. The perithecia are at length emergent or superficial, when the epidermis disappears.

WINTERIA CRUSTOSA, E. & E.—On decorticated oak, West Chester, Pa., June 1879. Perithecia membranaceous, 1-3— $\frac{1}{2}$ mm., depressed hemi-

spheric, tuberculosis, and roughly laciniate-cleft above, seated on and partly connected by a thin, crustose, black subiculum more or less distinct. Asci clavate cylindrical, 65—80 x 10 μ . Paraphyses filiform (?) soon resolved with a mass of granular matter. Sporidia biseriate, fusiform, 20—25 x 4—5 μ , yellowish or hyaline with a faint, gelatinous envelope, endochrome divided in the middle, exceptionally 3-times divided. The perithecia collapse when dry so as to resemble a *Peziza* with an obtuse margin. Ostiolum not very conspicuous, papillose-conic, with 4—5 more or less distinct furrows radiating from it. Allied to *WINTERIA ordinata*, Fr., but differs in its shorter, mostly 1-septate sporidia, and depressed perithecia.

PHYSALOSPORA ORONTII, E. & E.—On dead spots in living leaves of *Orontium aquaticum*, Newfield, N. J., July, 1885. Spots elongated, dead and dry, 3—4 x 1 cm. Perithecia erumpent, orbicular, flattened, 150—180 μ in diameter, pierced in the center with a small, round opening, texture membranaceous. Asci oblong-cylindrical, with an acute, sessile base and rather abruptly narrowed, truncate apex. Paraphyses? Sporidia biseriate and closely packed, granular, subhyaline, 14—16 x 6—7 μ . *Ramularia Orontii*, E. & M., and *Phyllosticta Orontii*, E. & M., are not improbably connected with this as conidia and spermogonia.

OPHIOBOLUS MEDUSA, E. & E.—Perithecia membranaceous, scattered, depressed-globose, 1.3— $\frac{1}{2}$ mm. in diameter, covered by the epidermis which is not discolored nor elevated but barely pierced by the black, punctiform ostiolum. Asci very long (400 μ and over by 12—15 μ broad) containing 8 filiform, curved sporidia nearly as long as the asci and 3—3 $\frac{1}{2}$ μ thick in the middle, gradually tapering to each end, yellowish or nearly hyaline, with endochrome multipartite. The perithecia lie in the furrowed cavities of the culm, attached above to the inner surface of the cuticle and covered with loose, spreading, weak, brown, septate hairs, 200—400 μ long by about 3 μ thick. On stems of *Spartina*, lying partly buried in the sand on the beach at Cape May, N. J. Collected by Mrs. Caroline Treat, during the summer of 1885.

OPHIOBOLUS STAPHYLINUS, E. & E.—On decorticated stems of *Staphylea trifolia*, West Chester, Pa., Sept. 1885 (Everhart.) Perithecia small, covered by the fibers of the wood through which project the short, straight, roughish, black, rostellate ostiola. Asci linear, 120—160 x 4 μ , accompanied by filiform paraphyses. Sporidia 8 in an ascus, filiform, yellowish, nucleolate and about as long as the asci.

On the same stems is a *Sphærospora* with oblong, depressed perithecia, and spores 18—20 x 8—9 μ , and other small perithecia partly covered by the fibres of the wood and containing numerous elliptical, subfuscous, 3 x 2 μ spores.

LEPTOSPHÆRIA RUBROINCTA, E. & E.—On dead twigs of *Staphylea trifolia*. Perithecia scattered, membranaceous, depressed globose, 200—250 μ , perforated above, covered by the slightly elevated epidermis which is slightly ruptured, and stained pale blood red. Asci clavate-cylindrical,

sessile, 100—110x10—13 *u*, sessile and accompanied by paraphyses. Sporidia biseriate, cylindrical, straight or slightly curved, deep straw yellow, 8—10-septate with one joint (a little below the middle) slightly swollen, 25—40 x 4—5 *u*, ends subobtuse. Distinguished by its sporidia from all the other red-tinged species.

HENDERSONIA STAPHYLEÆ, E. & E.—With the preceding, in perithecia scarcely to be distinguished from the ascigerous ones, unless a little larger, spores oblong, obtuse, straight or slightly curved, 3-septate and dark brown, Probably the pycnidial stage of the *Sphæria*.

SPHÆRELLA ORONTII, E. & E.—On yellowish spots on living leaves of *Orontium aquaticum*, Newfield, N. J., July 1885. Perithecia epiphyllous, scattered, minute (100 *u*), purplish black, membranaceous, coarsely cellular, perforated above, partly erumpent. Asci oblong, a little narrower above and abruptly contracted below into a very short, stipe-like base, 35—40 x 10—12 *u*, without paraphyses. Sporidia biseriate, oblong, hyaline, nucleate and faintly 1-septate, about 14x4—5 *u*, a little narrower at one end. *Physalospora Orontii* has larger perithecia and rather larger, regularly elliptical, continuous sporidia.

SPHÆRELLA CENOTHERÆ, E. & E.—On old capsules of *Oenothera biennis*, Newfield, N. J., July, 1885. Perithecia erumpent, hemispheric, 90—100 *u*, broadly perforated above, densely gregarious and mostly in broad strips or series on the valves of the capsules. Asci oblong slightly narrower above and abruptly contracted below into a short, stipe-like base. Sporidia biseriate, variable from oblong or ovate-oblong, 10—15 x 3 *u* and nucleate to oblong fusiform, slightly curved, faintly uniseptate and 15—20 x 3—3½ *u*. The smaller ones are apparently immature, being without septa.

AILOGRAPHUM CÆSPITOSUM, E. & E.—On bare wood of old cypress pickets, Louisiana. A. B. Langlais, 196a; com. Prof. F. L. Scribner. Growing in small (1 mm.) suborbicular clusters, on a subcrustose, slightly prominent, black stroma, presenting the general appearance of an erumpent *Sphæria*. Perithecia minute (¼ mm. or less in length), applanate, opening with a rather broad cleft, the base mostly bordered with brown, creeping threads. Asci ovate, sessile, 30 x 15 *u*; sporidia crowded, oblong-fusiform, obtuse, hyaline and uniseptate at first, becoming brown at length and often 3-septate, 15—20 x 3—5 *u*, constricted at the septum. Differs from the usual type of *Ailographum* in the sporidia becoming brown.

PEZIZA CYPHELLOIDES, E. & E.—Parasitic on the teeth of old *Hydnum* (*membranaceum*?) Newfield, N. J., Oct., 1885. Subsessile, minute, (¼—1.3 mm.) when fresh, soft, white, pubescent, margin incurved, texture fine, cellular. Asci cylindrical, branched below, spore bearing part 12—15 x 1½ *u* or including the branching, stipitate base, 24—30 *u* long. Spores globose, 8 in an ascus, about 1 *u* in diameter. Paraphyses none. The specimens were accompanied by *Penicillium glaucum*, Lk., the spores of

which are much like those of the *Peziza* only a little larger. In drying, the plant shrinks down to a mere white speck. Much resembles a *Cyphella*, but the cylindrical bodies containing the spores seem to us to be genuine asci. The plant appears to belong in the section *Mollisia*.

PEZIZA (HUMARIA) CESTRICA, E. & E.—On the ground among moss, West Chester, Pa., Aug. 28, 1885. B. M. Everhart, No. 512. Cæspitose, orange yellow, soft, sessile, orbicular or somewhat irregular from mutual pressure, about $\frac{1}{2}$ cm. diameter, concave, with the disk subplicate in the center, smooth or slightly pruinose outside, margin obtuse, texture coarsely vesiculose. Asci cylindrical, sessile, 115—125 x 7—8 μ . Paraphyses rather abruptly thickened, yellow and curved at the tips. Sporidia uniseriate, occupying the upper half of the asci, coarsely echinulate-roughened, binucleate and with a short, straight apiculus at each end, length including the apiculus 11—11 $\frac{1}{2}$ μ , breadth 4—5 μ .

Peziza Chæteri, Sm., has sporidia much like this, only wanting the appendages.

PATELLARIA SUBVELATA, E. & E.—On bark of living coniferous trees, Wash. Terr. W. N. Suksdorf (No. 210). Com. C. J. Sprague. Subcuticular at first, at length exposed, about 1-3 mm. diameter, black, thin, margin obscure. Asci 50—60 x 14—16 μ ; paraphyses yellowish, bearing at their tips numerous subglobose, small, dark brown conidia which form the superficial layer of the disk. Sporidia clavate-fusoid, slightly curved, broadest and rounded above, running almost to a point below, yellowish, endochrome about 4 times divided, 25—30 x 3 $\frac{1}{2}$ —4 μ . The general appearance is much like that of *Sphæria squamata*, C. & E.

This and the following species stand on the boundary line between lichens and fungi, but for the present at least, we include them here.

PATELLARIA CAROLINENSIS, E. & E.—On bleached wood, So. Carolina. H. W. Ravenel, 680. Sessile, orbicular, black, roughish, 1-6—1-3 mm., convex when moist, plane and concave when dry, margin obsolete. Asci oblong, 40—45 x 8—10 μ , broadest and rounded above, abruptly contracted below into a short, stipitate base; paraphyses abundant, stout, overtopping the asci, much branched above, their tips bearing brown, subglobose conidia which form a continuous layer and give a dark color to the disk. Sporidia 8 in an ascus, filiform-cylindrical, multiseptate, pale yellowish, rather broader at the upper end and nearly as long as the asci.

PATELLARIA LEUCOCHÆTES, E. & E.—On basal sheaths of dead *Andropogon*, Newfield, N. J., Nov. 1885. Appearing at first in the form of minute tufts of spreading, white hairs, in the midst of which soon appears the soft, orange-colored, convex-tuberculiform, immarginate hymenium, $\frac{1}{2}$ — $\frac{3}{4}$ μ in diameter. Asci oblong-cylindrical, 75—85 x 13—15 μ , sessile and surrounded by simple paraphyses only slightly thickened above. Sporidia fasciculate, cylindrical, nearly hyaline, nucleate and soon faintly multiseptate and slightly constricted at the septa, 75—80 x 4

— $4\frac{1}{2}$ μ , the upper end rounded and obtuse the lower end subacute. The hairs which remain as a fringe around the margin of the tuberculiform hymenium are without septa, undulate or crisped and about $2\frac{1}{2}$ μ in diameter. This varies considerably from the usual type of *Patellaria*.

VENTURIA GAULTHERIÆ, E. & E.—On living leaves of *Gaultheria procumbens*, Newfield, N. J., July. On orbicular, dark brown, $\frac{1}{2}$ mm. spots which are mostly of a lighter color (gray) in the center. Perithecia scattered, orbicular (75 μ), membranaceous and rather coarsely cellular, with a few, black, continuous, straight, spreading, 35 x 3 μ bristles above. Asci ovate-oblong, 30—35 x 8—11 μ , broader and slightly curved below, sessile, without paraphyses. Sporidia biseriate, subhyaline (with a greenish yellow tint), ovate-oblong, 3—4 nucleate, 1-septate and slightly constricted at the septum, 11—14 x 3 μ .

PHYLLOSTICTA GAULTHERIÆ, E. & E.—On living leaves of *Gaultheria procumbens*, Newfield, N. J., July, 1885. Spots amphigenous, scattered, dark reddish-purple, small (1—2 mm.), with a still darker purplish border. Perithecia amphigenous, sublenticular, black, coarsely cellular, slightly prominent, covered by the cuticle, 100—115 μ . Spores elliptical, hyaline, granular, 5—7 x 4—5 μ .

CHÆTOMELLA (?) *PERFORATA*, E. & E.—Perithecia superficial, subglobose ($\frac{1}{4}$ — $\frac{1}{2}$ mm.) with a small, circular opening above, sparingly clothed with straight, black, continuous, bristle-like hairs about equal in length to the diameter of the perithecia, more thickly set around the orifice, paler and more or less substellate-tufted below; spores very variable, from short oblong to oblong-elliptical, 10 μ long and uniseptate to 30 μ long and 3-septate, about 4 μ wide constricted at the septa and having in the mass a rosy hue. Differs from the type of *Chaetomella* in its perforated perithecium and septate spores. On *Cirsium discolor*. Charles City, Iowa, Sept., '82, Prof. J. C. Arthur, and on *Cirsium altissimum*, and *Artemisia Ludoviciana*, Ames, Iowa, Prof. C. E. Bessey.

STILBUM ACICULOSUM, E. & E.—On decaying leaves of *Orontium aquaticum*, Newfield, N. J., July 22d, 1885. Acicular, white, stem somewhat swollen towards the base, and about 40 μ thick, gradually tapering above to 12 or 15 μ thick, $\frac{3}{4}$ —1 mm. high, composed of hyaline, compacted fibers, of which the free ends of some project like bristles along the sides of the stem. Head obovate, about 75 μ high and 60—75 μ thick, spores oblong-elliptical, hyaline, 5—6 x $1\frac{1}{2}$ μ , borne in a dense stratum at the ends of the hyphæ.

STYLBUM CORYNOIDES, E. & E.—On *Hypoxylon tinctor*. Berk., Louisiana, A. B. Langlais, 29, com. Prof. F. L. Scribner. Stem slender, flexible, black but covered with a glaucous bloom, of fibrous texture, finely divided above and spreading into the close, spherical, flesh-colored head ($\frac{1}{4}$ — $\frac{1}{2}$ mm.) which is formed of the conglutinated, oblong-oval or elliptical 4—5 x $2\frac{1}{2}$ μ spores. The fungus does not grow directly from the Hypoxylon but springs from under the margin of bark and lichens surrounding it.

STILBUM ECHINATUM, E. & E.—Parasitic on *Arcyria cinerea*, Adirondack Mts., N. Y., Aug. 1884 and 1885. Coll. by Dr. Geo. A. Rex. Projecting horizontally (for the most part) from decaying heads of the *Arcyria* and thus causing them to appear echinate. White throughout; stem 300—350 x 30—40 μ straight; head globose, 100—112 μ diameter. Spores globose, minute ($\frac{1}{2}$ μ). *S. tomentosum*, Schrad., is a much coarser plant with oblong spores 4—5 x $1\frac{1}{2}$ μ .

KELLERMANIA, E. & E., nov. gen.

Perithecia immersed, membranaceous, ostiolate; stylospores cylindrical, large, septate, stipitate. Genus dedicated to Dr. W. A. Kellerman, its discoverer.

KELLERMANIA YUCCÆGENA, E. & E.—On dead or withered leaves of *Yucca angustifolia*, Manhattan, Kansas, June, 1885. Perithecia membranaceous, about .2 mm. in diameter, globose, buried in the substance of the leaf and only visible outwardly as small, dusky circles with a black spot in the center, caused by the minute, papilliform ostiolum barely visible through the slightly ruptured epidermis. Spores cylindrical, granular, 45—50 x 10—12 μ , abruptly contracted below into a slender, stipe-like base, 18—25 μ long. The granular contents are divided by a septum across the middle with indications of becoming fairly multi-septate. The outward appearance is the same as that of *Sphaeria nigro-annulata*, B. & C. The specimens in N. A. F. 1366, are this species in some copies.

If the cylindrical spores can be considered as asci, the species will be referable to *Julella*, Sacc., but they seem to be really stylospores

NEW LITERATURE.

BY W. A. KELLERMAN.

"RABENHORST-WINTER, FUNGI EUROPÆI," 32d Cent.

This splendid collection of fungi, indispensable to the American Mycologist, contains in the thirty-second Century 47 specimens that were collected in this country. In connection with seven of the species which are new to the literature of science, Dr. Winter has given also descriptions. They are as follows: *Puccinea Macowani*, Winter, I and III, in foliis vivis *Helichysi petiolati*, England; *Æcidium splendens*, Winter, in cotyledonibus vivis *Crotonis mononthagyni*, Missouri; *Peziza Ulei*, Winter, ad folia viva *Gleichoniæ dichotomæ*, Brazil; *Parodiella cæspitosa*, Winter, ad folia viva compositæ scandentis adhuc indeterminata, Brazil; *Diplodia maculicola*, Winter, ad folia viva Leguminosæ adhuc indeterminatæ, Brazil; and *Sphærella convexula* (Schw.)—whose asci and spores were hitherto undescribed—ad folia arida *Caryæ amaræ*, Ohio.

"KRIPTOGAMEN FLORA VON DEUTCHLAND, ÆSTERREICH UND DER SCHWEIZ. PILZE VON DR. WINTER. 20. LIEFERUNG."

This Lieferung of the II part, Vol. I, contains pp. 385-448, including a portion of the Pyrenomycetes (*Sphæriaceæ*). This carefully edited work of Dr. Winter's is doubtless too well known to American botanists to need a full account here.

"CHAMPIGNONS COPROPHILES DE LA BELQUIQUE. PAR ELIE MARCHAL, 1884-5." Pp. 45, 4 plates.

"ALGOLOGISKA OCH MYKOLOGISKA ANTECKNINGAR FRÅN EN BOTANISK RESA I LULEÅ LAPPMAOK. AF G. LAGEAHEIM." Konigl. Vetenskaps Föerhandlingar, 1884.

"MYKOLOGISKA BIDREG. AF G. LAGERHEIM." Separataftryck ur Botanska Notiser, 1884.

"FUNGI MORICOLÆ. ICONOGRAPHIA E DESCRIZIONE DEI FUNGHI PARASSITI DEL GELSO DI ANGUSTO NAPOLEONE BERLESE. Fascicolo I, II."

This small book cannot be too highly commended as to the execution of the numerous colored lithographic plates. The figures were drawn from nature by Sign. Berlese. They are accompanied with Latin descriptions of the species, and observations printed in the Italian language.